

Abstract of the Disclosure

A method of symbol combining and incremental redundancy for link adaptation and code space management was proposed. In order to reduce constraints on the Walsh codes allocation, MCS level change, as well as frame duration change for the initial transmission and re-transmissions, a “rate matching” stage is proposed between the Turbo encoder and block interleaver on the transmitter. In the initial transmission, the Turbo encoded symbols are interleaved with or without any puncturing or repeating (i.e. puncture/repeat factor is set to 1). The coded symbols are also stored in the memory for possible retransmissions. In the re-transmission, the transmitter first determines the number of Walsh codes available for this user and MCS level and frame duration according to the C/I feedback values from MS. The stored coded symbols are then punctured or repeated according to “rate matching factors”. On the receiver side, “rate matching factors” can be derived from the number of code channels, MCS level and frame duration of current re-transmissions and initial transmission. Then, de-puncturing/de-repeating is performed before coded symbol combining. A similar rate matching based IR/symbol combining scheme can be used to design different IR using different rate matching algorithms. It has low implementation complexity and is easily made backward compatible.